

OUTLINE SHEET 4-4-1

Personal Protective Equipment

A. Introduction

The use of personal protective equipment serves as the last line of defense against hazards. Improper use and maintenance of these equipment may result in grave injury, even death. This lesson details procedures on the use and maintenance of non-damage control personal protective equipment.

B. Enabling Objectives

4.11 **DESCRIBE** the use and maintenance of personal protective equipment.

C. Topic Outline

1. Introduction
2. Overview
3. Eye and Face Protection
4. Respiratory Protection
5. Hearing Protection
6. Foot, Head and Hand Protection
7. Electrical Protective Devices
8. Summary and Review
9. Assignment

ASSIGNMENT SHEET 4-4-2
Personal Protective Equipment

A. Introduction

This material is to be completed prior to the material being covered in class.

B. Enabling Objectives

Refer to enabling objectives in Outline Sheet 4-4-1.

C. Study Assignment

1. Read Information Sheet 4-4-3

D. Study Questions

1. When is the use of chipping goggles required?
2. What are the basic types of respirators?
3. What are four types of hearing protection devices?

INFORMATION SHEET 4-4-3 Personal Protective Equipment

A. Introduction

This information describes personal protective equipment (minus damage control equipment).

B. Reference

Basic Military Requirements NAVEDTRA 12043
NSTM Chapter 077 Personal Protective Equipment
NSTM Chapter 670 Stowage Handling, and Disposal of Hazardous
general use Combustibles
OPNAVINST 5100.23D
OPNAVINST 5100.19C

C. Information

- I. Personal protective equipment establishes a last line of defense. Personal protective equipment protects personnel from various hazards.
 - A. Devices may not operate as designed if not worn correctly or are subjected to improper maintenance. If you take care of the equipment, it will take care of you.
 - B. Personnel should know what equipment to wear, when to wear it, and where to wear it.
- II. Eye protection is used to keep foreign objects out of the eyes. There are many different types of eye protection, for example:
 - A. Safety glasses/spectacles are worn in areas of flying objects and particulate.
 - B. Chemical goggles protect the eyes from liquids, splashes, mists and sprays.
 - C. Welding goggles are worn to protect from the glare and injurious radiation as well as flying objects, chips and metal splashes.
 - D. Chipping goggles are worn to protect the eyes from large flying objects generated from:
 1. machining metal parts
 2. grinding tools
 3. chiseling metal
 - E. Welding helmets are used during various kinds of arc welding and heavy gas cutting.
 - F. Face shields: protect the face and neck from flying particles, liquids and sprays. The face shield used in conjunction with goggles provide adequate eye protection.

- G. All goggles and face shields should be stored where they are protected from dust, moisture and the weight of objects on top of them.
- H. Eye protection should be worn when
 - 1. cutting and welding metals
 - 2. drilling a hole
 - 3. grinding
 - 4. milling
 - 5. chipping paint
 - 6. sand blasting or other dust producing operations. .
 - 7. handling chemicals
- III. Respiratory protection is used by personnel to protect from air born contaminants. Respirators are available in quarter, half, and full face pieces. The Respiratory Protection Program Manager (RPPM) keeps a record of individuals that have been fitted for a respirator. Before using a respirator, personnel shall be fit-tested initially then annually thereafter.
 - A. There are three basic types of respirators:
 - 1. Air purifying respirators use a filter, cartridge(s) or canister(s) to remove the contaminants from the air. These types of respirator can be disposable or non-disposable and require adequate oxygen to operate properly. The cartridges used for these respirators are color coded to the type of contaminant they remove.
 - 2. Supplied-air respirator provides breathable air from a different area from the user. This type of respirator is to be used when the contaminant is undetectable to personnel. Supplied air respirators prevent any contaminants from entering the face piece.
 - 3. Self contained breathing apparatus (SCBA)allows the user to be totally independent from a stationary source of air. This type of respirator consists of a compressed air cylinder. When the user exhales the air in the face piece is replenished from the cylinder. It is similar to what civilian fire fighters or divers use.
 - B. Maintenance-Inspect the respirator before and after each for:
 - 1. torn or broken straps
 - 2. cracks, tears, and holes in the face piece
 - 3. foreign matter in the intake and exhaust valves
 - 4. the proper cartridge, canister, or filter
 - C. Respirators are to be cleaned by personnel that have received proper training. Respirators are to be cleaned and inspected when the user returns it.
- IV. Hearing protection is used by personnel to prevent hearing loss while in a noise hazard environment.

- A. Single hearing protection is using only one type of hearing protection. This method is used for average noise levels that are above 84 decibels or at 140 decibels peak.
 1. A decibel is a unit used to express sound pressure levels.
 2. Means intermittent burst of loud noise, such as gunfire.
- B. Double hearing protection is using two types of hearing protection. This method is used for average noise levels that are above 104 decibels.
- C. Hearing protection must be worn in spaces with a noise hazard label posted.
- D. Hearing protection devices:
 1. Insert type earplugs
 - a) Worn alone as single hearing protection or with a circumaural muff to provide double hearing protection.
 - b) Two types, the double or triple flanges are issued by the Medical Department.
 - c) They can be worn for long periods with little discomfort.
 2. Headband earcaps
 - a) They are easy to carry and quick to put on.
 - b) This type of hearing protection provides the user with single hearing protection only.
 - c) The headband earcaps will become uncomfortable after prolonged use.
 3. Disposable earplugs
 - a) They are comfortable to wear and no fitting is required.
 - b) Disposable earplugs give the user single hearing protection, however, they may be use with circumaural muffs for double hearing protection.
 - c) Disposable earplugs get dirty easily from the oil and dirt on personnel's hands and they are very difficult to clean.
 4. Circumaural muffs
 - a) Can be worn as single hearing protection or with other insert type hearing protection devices to obtain double protection.
 - b) Circumaural muffs are expensive and may not be very effective if personnel wear glasses or has long hair.
- V. Foot protection is intended to protect personnel's toes from falling objects. The foot protection required in the Navy are steel toe shoes.
- VI. Head protection-helmets or hard hats are used to protect personnel from falling and flying objects, and from limited electrical shock and burn.
- VII. Electrical protective devices are provided to electrical workers who

- perform work on energized or potentially energized electrical systems.
 - A. Rubber insulating gloves are used to protect the hands from electrical shock.
 - B. Rubber matting is used in electrical and electronic spaces to eliminate accidents and afford maximum protection from electrical shock.
- VIII. Hand protection-used when personnel's hands are exposed to or likely to be exposed to hazards.
 - A. Leather gloves are worn to handle objects with sharp edges.
 - B. Proper chemical gloves must be worn when working with chemicals.
- IX. **WARNING: Gloves will not be worn while operating or moving rotating equipment.**
- X. Personnel working in engineering spaces are required to wear flame retardant coveralls or dungarees. Never will synthetic or Navy twill (CNT) uniforms be worn in engineering spaces. The following protective clothing may be required as specified by safety inspections or standard work practices:
 - A. Flameproof coveralls
 - B. Disposable coveralls
 - C. Impervious chemical spill coveralls
 - D. Welding leathers
 - E. Chemical aprons